Author Index—*Journal of Food Science*—Volume 34, 1969

A

Aberle, E. D., 600
Ahmed, E. M., 332, 627
Akahashi, F. T., 606
Akiba, M., 88
Alban, E. K., 295
Albin, I. A., 265
Alford, J. A., 75
Ampola, V. G., 27
Anderson, L. L., 486
Arakji, O. A., 340
Arroyo, P. T., 600
Awad, A., 1

B

Baker, R. C., 423
Baliga, B. R., 597
Barkate, J. A., 268
Basker, H. B., 254
Batcher, O. M., 272
Bate-Smith, E. C., 203
Beery, K. E., 480, 557
Behnke, J. R., 370
Bell, T. A., 419
Belli-Donini, M. L., 509
Biltcliffe, D. O., 641
Bird, E. W., 279
Bixby, D. G., 113
Blackwell, B., 47
Borchert, L. L., 148
Bosund, I., 13
Brant, A. W., 272
Bratzler, L. J., 146
Bredderman, S. H., 181
Briskey, E. J., 120, 125, 148, 299, 308, 389, 571, 606, 633
Brown, W. D., 404
Brunner, J. R., 115
Brunon, R., 397
Bryant, E. F., 191
Busta, F. F., 471

C

Cadwell, M. C., 248
Cahill V. R., 93
Caldwell, K. A., 290
Carey, W. E., 295
Carlin, A. F., 210
Carpenter, Z. L., 612
Carreno-Diaz, R., 415
Carroll, D. E., 320
Cash, D., 210
Cassens, R. G., 120, 125, 299, 308, 389, 571, 633
Champagne, J. R., 335
Chang, Y., 329, 514
Chaudhry, H. M., 183, 196
Chen, J. H., 386
Clydesdale, F. M., 349
Cobb III, B. F., 404
Cobb, W. Y., 466, 625
Coleman, R. L., 610
Conner, H. A., 587
Cooper, C. C., 299
Cooper, J., 397
Crawford, J. K., 527
Crevasse, G. A., 52, 115
Crouse, J. D., 530

D

Davey, C. L., 69
Davis, C. E., 93
Dawson, L. E., 37, 359
deFremery, D., 176
Dela Mar, R. R., 287
deLumen, B. O., 196
Dennison, R. A., 332, 627
Do, J. Y., 618
Dooley, C. J., 105, 246, 544
Dowling, B., 101
Dryden, F. D., 57

E

Eder, B. D., 518
Embs, R. J., 500
Emodi, A. S., 78, 82
Ershoff, B. H., 355
Essary, E. O., 569
Etchells, J. L., 419

F

Fennema, O., 1, 370, 378
Ferren, W. P., 317
Field, R. A., 329, 514
Fields, M. L., 343, 345, 346
Filipic, V. J., 105, 246, 544
Flath, R. A., 382
Fleming, H. P., 419
Forrey, R. R., 382
Fox, K., 518
Francis, F. J., 287, 349
Freedland, R. A., 462
Fukazawa, T., 242, 308, 571, 606
Fuleki, T., 365

G

Ganrot, B., 13
Gantner, G., 446
Gardiner, B. L., 411
Gardner, L. J., 637
Geisman, J. R., 295
Genigeorgis, C., 62
Gilbert, K. V., 69
Gillis, W. A., 375
Girardot, N. F., 489
Giron, D. J., 239
Goldstein, J. L., 482
Goll, D. E., 183, 196
Goodnight, K. C., 353
Gortner, W. A., 577
Gould, W. A., 295
Greaser, M. L., 120, 125, 633
Green, G. F., 627
Greene, B. E., 110
Grosjean, O., 404
Guadagni, D. G., 630
Guarino, P. A., 31
Guenther, H., 469

H

Hall, W. M., 212
Hamm, R., 446, 449, 452
Harrison, D. L., 486
Hasegawa, S., 527
Hashimoto, Y., 242
Hefferan, P. M., 353
Heidelbaugh, N. D., 239
Henrickson, R. L., 375, 603
Herring, H. K., 308, 389, 571
Hills, C. H., 246, 544
Hoekstra, W. G., 120, 125, 633
Hoff, J. E., 53
Horimoto, K., 156
Howard, G. L., 561
Howe, J. M., 600
Huck, M. B., 537
Hultin, H. O., 165, 172, 622

I

Inglett, G. E., 101, 408
Ingram, P., 637
Issenberg, P., 504

J

Janes, R., 212
Jay, J. M., 532
Judge, M. D., 42

K

Kaess, G., 394
Kaffezakis, J. G., 426
Kahn, J. H., 587
Kamen, J. M., 475
Karel, M., 160, 540
Kastner, C. L., 603
Kaszycki, H. P., 527
Keeney, P. G., 497
Kemp, B., 132
Kemp, J. D., 530
Kendrick, J. L., 292
King, A. D., 224
King, G. T., 612
Kliewer, W. M., 274
Kline, E. A., 196
Kline, R. C., 557
Klose, A. A., 524
Knapp, F. F., 584
Kolczak, T., 547
Körmendy, L., 446, 452
Kraft, A. A., 279
Kramer, A., 31, 426
Krbechek, L., 101
Kroll, B. J., 475
Kunze, M. S., 272
Kuzminski, L. N., 561

L

Labuza, T. P., 324
Lahiry, N. L., 597
LaRoe, E. G., 587
Lechowich, R. V., 78, 82
Ledford, R. A., 386
Lenaz, G., 581
Leong, K. C., 136
Levin, R. E., 224
Lifshitz, A., 254
Lilyblade, A. L., 142
Lindsay, R. C., 251, 265
Lineweaver, H., 290
Lockhart, E. E., 489
Lopez, A., 320
Lovell, R. T., 268
Luh, B. S., 415
Lund, D. B., 378
Lund, E. D., 502, 610
Lutalo-Bosa, A. J., 401

Mc

McClain, P. E., 115, 306
McDaniel, M. R., 251
McWeeny, D. J., 641
McWilliams, M., 493

M

Mabbitt, L. A., 47
Mackey, A. C., 493
MacMillan, J. D., 224
Macrae, H. F., 401
Maier, V. P., 527
Marchello, J. A., 57
Markakis, P., 500
Marley, E., 47
Martin, M., 248
Maxey, J. A., 146
May, J. F., 408
Mebine, B., 404
Mecchi, E. P., 436, 443
Miers, J. C., 630
Miller, D., 136
Monroe, R. J., 471
Montgomery, M. W., 283
Moore, J. D., 113
Moorjani, M. N., 597
Moruzzi, G., 581
Moshonas, M. G., 502, 610
Motohiro, T., 88
Mott, C., 210
Myers, M. J., 504

N

Nagaoka, C., 156
Nagel, C. W., 224
Nawar, W. W., 335
Nelson, A. I., 261
Nelson, P. E., 53
Newcomb II, W. J., 196
Ng, H., 224
Nicholas, H. J., 584
Nonaka, M., 436

O

Ockerman, H. W., 93
Oliver, S. M., 215
Olson, L. E., 618
Otsuka, H., 392
Ough, C. S., 228

P

Padwal-Desal, S. R., 332
Palmer, S. J., 426
Pankey, R. R., 312
Parrish, Jr., F. C., 183, 196
Parsons, J. G., 497
Pattee, H. E., 625
Patton, S., 497
Paul, P. C., 554, 568
Pearson, A. M., 10, 52, 115, 303, 306, 592
Pepper, F. H., 10
Peryam, D. B., 475
Peryam, D. R., 475, 489
Peterson, D. W., 142
Pieczarka, D., 411
Pippen, E. L., 436, 443
Pool, M. F., 524
Potty, V. H., 231
Powell, R. C. T., 641
Powrie, W. D., 1, 148, 370, 378
Pratt, D. E., 551
Putnam, T. B., 154, 283

R

Rasper, V., 203
Ray, D. E., 57
Rehfeld, B. M., 551
Rey, C. R., 279
Riemann, H., 62
Riley, M. L., 514
Ritchey, S. J., 434, 569
Rockland, L. B., 411
Rogers, P. J., 434
Ronsivalli, L. J., 27
Rotman, Y., 343, 345, 346
Roubal, W. T., 194
Rucker, P. G., 355

S

Sadlek, W. W., 62
Salunkhe, D. K., 618
Samejima, K., 242
Sather, L. A., 251, 265
Schnell, P. G., 423
Schoebel, T., 324
Schweigert, B. S., 303
Seals, R. G., 279
Searcy, D. J., 486
Sechi, A. M., 581
Sen, N. P., 22
Shane, N. A., 317
Shelef, L. A., 532
Sherman, P., 458
Shibko, S., 462
Shipe, W. F., 181
Shipley, P. A., 587
Siefker, J. R., 93
Siek, T. J., 265
Singleton, J. A., 625
Sink, J. D., 557
Smit, C. J. B., 191
Smith, G. C., 612
Smith, J. L., 75
Smith, Jr., M. C., 42
Smith, Jr., P., 136
Snyder, H. E., 258
Southard, J. H., 622
Spark, A. A., 641
Spinelli, J., 132
Splittstoesser, D. F., 248
Spooner, M. E., 146
Stadelman, W. J., 42, 312
Starkovich, J. A., 194
Steinberg, M. P., 261
Steinhauer, J. E., 37, 359
Stepak, Y., 254
Stevens, K. L., 484
Stinson, C. G., 537
Stinson, E. E., 246, 544
Stone, H., 215
Stornaiuolo, M. R., 509
Strasser, J., 18
Streeter, V., 176
Stumbo, C. R., 561
Susz, J. P., 462

T

Take, T., 392
Talley, F., 99
Tanikawa, E., 88
Tannebaum, S. R., 324
Tappel, A. L., 462
Tarr, H. L. A., 637
Teranishi, R., 382
Thomas, F. B., 471
Thomas, N. W., 600
Tjhio, K. H., 540
Toledo, R., 261
Turba, F., 469

U

Underwood, J. C., 105

V

Vadehra, D. V., 423
Vaisey, M., 397
Vaughn, R. H., 224
Venstrom, D. W., 630
Viviani, R., 581
von Elbe, J. H., 113

W

Wagner, R., 101

Wasserman, A. E., 99
Watts, B. M., 292
Weatherspoon, J. B., 146
Webb, N. B., 471
Weber, M., 547
Weidemann, J. F., 394
Weiner, P. D., 303, 592
Weiser, H. H., 93
Westort, C., 165, 172
Wick, E. L., 482, 504
Wild-Altamirano, C., 235
Wilson III, C. W., 521, 535
Wilson, Jr., J. E., 430
Wilson, L. L., 557
Witzeman, J. S., 212
Womack, M., 430
Woolsey, A. P., 554, 568
Wrolstad, R. E., 154

Y

Yamagata, M., 156
Yang, H. Y., 340
Yasui, T., 242, 606
York II, G. K., 224
Young, R. W., 569

Z

Ziegler, J. H., 480, 557
Zirlin, A., 160
Zimmerman, G. L., 258
Zimmermann, W., 210

Subject Index–*Journal of Food Science*–Volume 34, 1969

A

acetaldehyde, in fermented green olives, 419
acetate, activation in mevalonic acid synthesis, 231
acetic acid, determining in frozen eggs, 359
acetoacetyl-CoA thiolase, activity in oranges, 231
achromobacter, in beef tissue, 93
—in olives, 224
acid, content of bologna and smoke flavor, 146
actin, heat gelling properties, 242
activation analysis, for arsenic residues, 295
actomyosin, ATPase, contractility and tenderness, 389
—beef tenderness, 571
—bovine natural, 389, 571
—decrease during whitefish storage, 1
—fish proteins during storage, 597
—heat gelling properties, 242
—physico-chemical properties, 571
—rabbit and bovine, 309
—rabbit, effect of rigor, 303
adductor muscle, scallops, composition, 471
adenosine triphosphatase (ATPase), activity in actomyosin, 309
—activity, fibrillar protein extract from rabbit, 303
—activity, pork muscle, 120
—relationship to contractility and tenderness, 389
adenosine triphosphate (ATP), pork muscle, 120
adhesion, foodstuffs, on texture, 458
adipose tissue, beef, changes in heated, 10
adsorption, on PVP, strawberry pigment isolation, 154
adulteration, Israel lemon oil, 255
aerobacter, in olives, 224
aeromonas, in olives, 224
age differences, mutton flavor, 272
aging, chicken muscle myofibrils, 606
—chicken, tenderization, 176
—meat, fine structure changes, 69
—postmortem, sulfhydryl in chicken, 290
—postmortem tenderness, 389
—time and trichina viability, 530
alcoholic food systems, RF energy and microorganisms, 320
alcohols, celery essential oil, 535
aldehydes, normal, thresholds in butteroil, 265
—orange peel oil, 502
alpha-amylase, studied by cryoscopy, 181
amide nitrogen, utilization by young rat, 430
amines, phenolic, chromatographic properties, 23
amino acids, carrot soup, 392
—free, bovine muscle and tenderness, 329
—free, changes in bovine muscle, 196
—free, grape varieties, 274
—interference in proline measurements, 228
—in yeasts, 50
analysis, head-space vapors, 31
—tyramine in foods, 22
antemortem treatment, roast pork palatability, 486
anthocyanin(s), grapes, 415
—pigments in sour cherries, 113
—pigments of strawberry isolation, 154
—strawberry, rhubarb, radish, onion, 365
antioxidants, lipid oxidation, 110
apple(s), comparisons by vapor analysis, 382
—gas exchange preserved, 426
—heat of respiration, 264
—plugs preserved by gas, microbiology, 426
aroma (also see: odor),
—banana volatiles, 504
—cooked chicken, role of hydrogen sulfide, 443
—fat, in cooked poultry, 436
arsenic residues, activation analysis, 295
ascorbic acid, oxidation, effect of organophosphates, 551
ascospore, *Byssochlamys fulva,* production, 248
automatic sampling system, respiratory gases of irradiated citrus, 627
autoxidation, methyl linoleate, freeze-dried systems, 540
avian muscle, cold shortening, 42

B

baby clams, can swelling and blackening, 88
—spoilage of canned, 88
Bacillus stearothermophilus spores, chemical composition, 345
—heat resistance, 345
—release of dipicolinic acid, 343
—sporulation studies, 346
Bacillus subtilis spores, survival, 518
bacteria, in commercial freshwater crayfish, 268
—foods, chromatographic analysis, 31
—gram negative and olive sloughing, 224
—health-related, growth in crayfish, 268
—olive spoilage, 224
bacteriology, sea-bottom mud and canned clams, 88
banana, pulp, sterols and triterpenes, 584
—ripening, lipid, 482
—volatiles, analysis, 504
bean(s), green, esterases, 283
—lima, heat of respiration, 264
beef, actomyosin, 309, 389, 571
—adipose tissue, changes in heated, 10
—aging, 69
—chemical constituents and quality, 57
—fat, volatile components, 335
—freeze-dried, quality changes, 18
—heated, H_2S in, 10
—influence of external fat cover, 544, 568
—microbial quality, 532
—pigment changes, 110, 258
—raw, lipid oxidation and pigments, 110
—sizing steaks for taste tests, 480
—skeletal muscle, physical properties, 557
beef muscle, catheptic enzymatic activity, 401
—free amino acids, 196, 329
—hydrolytic enzymes, 401
—nonprotein nitrogen, 196
—protein fraction changes, 469
—protein solubility, 183
—tenderness, 329
—tension on pre-rigor, 375
—transaminases, 447, 449, 452
beef tenderness, connective tissue, 514
—evaluation, 612
—sensory, 434
beef tissue, comparison of sterile and inoculated, 93
benzaldehyde, food flavor, 466
berries, serendipity, intense sweetener, 408
beta-amylase, studied by cryoscopy, 181
beverages, deterimnation of fluoride, 317
biochemical characteristics, pseudomonas spoilage, 279
bisulfite, horseradish peroxidase, 500
blackening, in canned baby clams, 88
bleached paprika, carotenoid degradation, 287
bologna, smoke flavor, 146
botulism, spores, death kinetics, 561
bovine (see: beef)
breast muscle, chicken, preparation of sarcolemmae, 165
—chicken, sulfhydryl content, 290
—chicken, tenderness, 142
breeds, beef, and tenderness, 329
Brevibacterium linens, degradation of DDT and DDE, 386
broilers, menhaden oil in feed, 136
bromelain, serendipity berries, 408
buffered food systems, RF energy and microorganisms, 320
butter, sweet cream, flavor, 251
butteroil, odor-free, preparation, 265
—taste thresholds of butter volatiles, 265
butyric acid, determining in frozen eggs, 359
Byssochlamys fulva, ascospore production, 248

C

calcium, accumulation, pork muscle, 120
—accumulation, sarcoplasmic reticulum, 633
—bacillus sporulation, 346
—can swelling, canned baby clams, 88
—chelators, rabbit and pig muscles, 592
capillary distribution, muscle, stress-susceptible animals, 299
carbonyl(s), content of bologna and smoke flavor, 146
—microorganisms in lard, 75
carotenoid, degradation, in bleached paprika, 287
carrots, amino acids and sugars, 392
—sapid components, 392
catalysis, sucrose hydrolysis, freezing, 378
catalyzed reactions, enzyme, under inert gas pressure, 370
cathepsins, bovine muscle, 401
catheptic enzymes, in beef muscle, 401
celery, essential oil, 521, 535
cellulase, studied by cryoscopy, 181
characterization, chemical, pork tissues, 115
—Israel lemon oil, 254
—pectic enzymes in cranberry, 340
—physical, pork muscle, connective tissue, 306
cheese microorganisms, degradation of DDT and DDE, 386
chelators, calcium, effect on muscle, 592
chemical constituents, of beef muscle and eating quality, 57
chemistry, sea-bottom mud and canned clams, 88
cherry(ies), essence, high-boiling components, 544
—essence, low-boiling components, 246
—sour, pigment studies, 113
chicken, breast muscle, mitochondria, 622
—cooked, role of hydrogen sulfide in aroma, 443
—muscle, cold shortening, 42
—muscle, myofibrils, 606
—mutant, tenderness, 142
—postmortem aging and tenderization, 176
—skeletal muscle sarcolemmae, 165, 172
—spoilage, due to pseudomonas, 279
—sulfhydryl content of muscle, 290
—tenderization and connective tissue, 176
—tenderness, 142
—tissues, 569
chromatography, analyzing serendipity berries, 408
—herring lipid hydrolysis, 13
—peach volatiles, 618
—purifying 5′-nucleotidase, 637
—separating lipids in wheat germ, 581
—sterols and triterpenes in banana pulp, 584
—yeast extract analysis, 47
chromatography, gas, analysis of head-space vapors, 31
—banana volatiles, 504
—celery essential oil, 521, 535
—clostridia, 411
—in DDT and DDE degradation, 386
—fat volatiles, 335
—fruit comparisons, 382
—maple flavor components, 105
—poultry fat aroma, 436
—vapor analysis in fermented olives, 419
—whiskey components, 587
chromatography, gas-liquid, cherry essence, 246
—determining acids in eggs, 359
—frozen egg studies, 37
—lemon oil adulteration, 254
—peanut volatiles, 625
chromatography, paper, amino acids in grapes, 274
—for anthocyanins, 365
—grape anthocyanins, 415
—sour cherry pigments, 113
chymotrypsin, activity under inert gas pressure, 370
citrus, fruits, respiration, 627
clostridia, differential characteristics, 212
Clostridium botulinum, spores, thermochemical death, 561
Clostridium botulinum Type E, spores, 78, 82
Clostridium perfringens, detection in foods, 212
—enumeration in foods, 212
—growth stimulation by legumes, 411
cobalt, bacillus sporulation, 346
cocoa beans, phospholipids, identification, 497
cod, Pacific, 5′-nucleotidase, 637

coffee, sensory evaluation, 489
cold shortening, avian muscle, 42
coliform bacteria, differentiation, 224
collagen, contamination from dialysis tubing, 52
—pork muscle, composition, 115
color, due to Maillard reaction and SO_2, 641
—preservation in fresh meat, 292
—spinach puree, 349
colorimetry, of foods, 349
components (see also: composition),
—flavor fraction of maple syrup, 105
—low-boiling, cherry essence, 246
—peanut volatiles, 625
—sapid, carrots, 392
—volatile, irradiated fats, 335
—volatile, whiskey, 587
—wheat flavor, 493
composition (see also: components),
—*Bacillus stearothermophilus* spores, 345
—chemical, wheat germ, 282
—egg, dietary fat, 312
—free fatty acids, herring, 14
—lipids in bananas, 482
—maple flavor fraction, 107
—Montmorency cherry essence, 246, 544
—orange essence oil, 610
—orange peel oil, 502
—scallop meats, variations, 471
—volatiles in tomatoes, 53
—wheat flavor volatiles, 493
—whiskey, 587
concentration, limited water, and sucrose hydrolysis, 324
connective tissue, epimysial, and beef tenderness, 514
—pork muscle, 115, 306
—stability and chicken tenderness, 176
constituents, flavor fraction, maple syrup, 105
contractility of muscle, and ATPase, tenderness, 389
controlled atmosphere (CA), heat of respiration of fresh produce, 261
cooking methods, DDT in chicken, 569
cooking time, beef, external fat cover, 568
—beef, tenderness and juiciness, 434
cooking weight losses, chicken tenderness, 142
cores, meat, providing uniform, 603
correlation, data with visual rankings, spinach, 349
cranberry, pectic enzymes, 340
crayfish, health-related bacteria, 268
cryoscopy, enzymatic studies, 181
cured meat, production of enterotoxin-B, 62
cysteine, tuna greening, 404

D

DDE, degradation by cheese microorganisms, 386
DDT, in chicken, cooking, 569
—degradation by cheese microorganisms, 386
dark-firm-dry (DFD), pork muscle, palatability, 486
dates, polygalacturonase, 527
defoliants, source of arsenic residues, 295
degradation, carotenoid, in bleached paprika, 287
—DDT and DDE by microorganisms, 386
—IMP, in frozen and thawed fish, 132
dehydrated food, sucrose hydrolysis, 324
dehydrogenase activity, in tomato mitochondria, 332
demethylation, pectin, 191
detection, arsenic residues in plants, 295
—deterioration, frozen whitefish muscle, 1
—lemon oil adulteration, 254
—quality changes, freeze-dried beef, 18
determination, acids in frozen whole eggs, 359
—fluoride in beverages, 317
—glucose and glycogen from single meat sample, 353
—lactic and succinic acids in eggs, 37
—rapid, proline in grapes and wines, 228
dextrose, bacillus sporulation, 346
diazomethane, for methylation of pectin, 191
dietary fats, eggs, 312
differences, hedonic, and number of samples, 475
dihydrochalcone sweeteners, evaluation, 101
1,2-dihydro-nootkatone, from nootkatone, 484
dilution, isotope, for food flavor, 466
dipicolinic acid, from *Bacillus stearothermophilus,* 343
dipping treatment, freezer burn, 394
discoloration, hard cooked egg rolls, 423
discrimination, paired comparisons of coffees, 489

E

egg(s), dietary fats, 312
—frozen whole, determining acids, 37, 359
—rolls, hard cooked, discoloration, 423
elasticity, foodstuffs, texture, 458
electron microscopy, identification of biological tissue, 125
—pork muscle, 125
electrophoresis, sour cherry pigment, 113
—starch gel, pork muscle proteins, 148
enterotoxin-B, production in cured meats, 62
environment, phosphate metabolites, 600
enzymatic, activity, rat liver fractions, 462
—activity, vanilla fruit, 235
—properties, sarcolemmae from chicken muscle, 172
—studies by cryoscopy, 181
enzyme(s), catalyzed reactions under gas pressure, 370
—catheptic, activity in beef muscle, 401
—hydrolytic, in bovine muscle, 401
—in mevalonic acid synthesis in orange, 231
—pectic, in cranberry, 340
epimysial, connective tissue and beef tenderness, 514
—connective tissue in pork, 306
Escherichia, in olives, 224
essence, Montmorency cherry, composition 246, 544
esterases, of green beans, classification, 283
esters, orange peel oil, 502
ethanol, in fermented olives, 419
ethylenediaminetetraacetic acid (EDTA), effect on actomyosin, 309
evaluation, beef tenderness, 612
—sensory, broilers, 136
—smoked frankfurters, 99
experimentation, natural actomyosin, 309
extract-release volume, and beef microbial quality, 532

F

fat(s), aroma, cooked poultry, origin and nature, 436
—content of beef, influence, 554
—dietary, eggs, 312
—external, influence on raw and cooked beef, 554, 568
—irradiated, volatile components, 335
fatty acid(s), in butter, 251
—content, broiler tissues, 136
—distribution, herring lipids, 13
—free, taste thresholds in butteroil, 265
—ripening banana lipids, 482
feeding, menhaden oil, broilers, 136
fiber characteristics, muscle stress-susceptible animals, 299
fibrillar protein extract, rabbit muscle, 303
fine structure, meat during aging, 69
fish, fresh water, muscle proteins, 597
—IMP degradation, 132
—muscle 5′-nucleotidase, 637
—unfrozen vs frozen-and-thawed, 132
fish oils, use of semiautomated thiocyanate method, 194
fish protein concentrate (FPC), nutritive value, 355
flavor, banana volatiles, 504
—butter, free fatty acids, 251
—components, food quantitation, 466
—components, wheat, 493
—fraction of maple syrup, 105
—mutton, sensory evaluation, 272
—smoke effect on bologna, 146
fluoride, determination in beverages, 317
food(s), colorimetry, 349
—detection and enumeration of clostridia, 212
—polio virus in, processing, 239
—tyramine, 22
foodstuffs, texture, 458
food systems, lethality of RF energy on microorganisms, 320
formic acid, determining in frozen eggs, 359
fractionation, fish proteins during storage, 597
frankfurters, smoked, evaluation, 99
freeze-dried, beef quality, 18
—gelatin-methyl linoleates, oxidation, 160
freeze-drying, autoxidation of methyl linoleate, 540
—polio virus in foods, 239
—reaction to limited water, 324
freezer burn, animal tissues, 394
freezing, sucrose hydrolysis, 378
fresh produce, in CA, heat of respiration, 261
frozen, Baltic herring, lipid hydrolysis, 13
—eggs, acids, 37
—eggs, determining acids, 359
—whitefish, muscle deterioration, 1
fruit comparisons, high resolution vapor analysis, 382

G

gas chromatography (see: chromatography, gas)
gas exchange, preservation, apple and potato, 426
gas production, growth, clostridia, 411
gelatin, changes after incubation, 160
gelatin-methyl linoleate system, oxidation effects in freeze-drying, 160
gelling heat, protein solutions, 242
Geotrichum, degradation of DDT and DDE, 386
glucose and glycogen determination, one sample, 353
glucosidase, in vanilla fruit, 235
glutamic-oxaloacetic transaminase, freezing and thawing, 452
—role in muscle, 447, 449, 452
glutamic-pyruvic transaminase, role in muscle, 447
glutamine, amide nitrogen utilization, 430
glycogen and glucose determination, one sample, 353
glycolytic activity, chicken muscle mitochondria, 622
—relationship to mitochondria, 622
grapefruit nootkatone, 484
grapes, determination of proline, 228
—Trousseau, anthocyanin pigments, 415
grape varieties, composition, 275
—free amino acids, 274
—predominant amino acids, 277
greening, tuna, cause, 156
—tuna, myoglobin effects, 404
growth, clostridia, effect of legumes, 411
—regulators on pineapples, 577
gum (see: hydrocolloid sol)

H

haddock, irradiation, 27
ham, dry-cured, trichina viability, 530
—enterotoxin-B production, 62
head-space vapor(s), analysis for microorganisms, 31
—analysis, Spanish-type green olives, 419
heat, resistance, *Bacillus stearothermophilus* spores, 345
—respiration, fresh produce in CA, 261
—wet and dry, and bacilli spores, 518
heating, DDT in chicken, 569
heating time and dipicolinic acid in spores, 343
hedonic differences, function of number of samples, 475
herring, frozen, lipid hydrolysis, 13
high resolution vapor analysis, for fruit comparisons, 382
histamine content, yeast products, 47
histidine and autoxidation of methyl linoleate, 540
homogenates for porcine muscle, 120
horseradish peroxidase, bisulfite, 500
humidity rearing, pork quality, 600
hydrocolloid sols, sensory sweetness, 397
hydrogen sulfide, changes in heated beef adipose tissue, 10
—in chicken meat, 443
—contributor to cooked chicken aroma, 443
—poultry fat aroma, 436
hydrolysis, acid, freezing sucrose, 378
—enzymatic, freezing sucrose, 378
—lipid, frozen herring, 13
—sucrose, and limited water, 324
hydrolytic enzymes, in bovine skeletal muscle, 401
hydroxyproline, relation to chicken tenderness, 176
hysteresis, sorption isobar, freeze-dried beef, 18

I

identification, alcohols in celery oil, 535
—cocoa bean phospholipids, 497
—microorganisms, head-space vapor analysis, 31
—pectic enzymes in cranberry, 340
inert gas, under high pressure, enzyme reactions, 370
inhibition, cod muscle 5′-nucleotidase, 639
—enzyme action, under high inert gas pressure, 370
—sulfite, and Maillard reaction, 641
inhibitor specifications, green bean esterases, 284
inosine monophosphate (IMP), degradation, fish, 132
insecticides, organophosphate, and ascorbic acid, 551
invertase, activity, under inert gas pressure, 370
—freezing, sucrose hydrolysis, 378
ion selective solid state electrode, determining fluoride in beverages, 317

irradiated, citrus fruits, respiration, 627
—fats, volatile components, 335
—strawberries, pectin changes, 509
—tomato mitochondria, properties, 332
irradiation, haddock, 27
—polio virus in foods, 239
isotope dilution, food flavor, 466

J

juiciness, beef, cooking time, 434

K

ketones, orange peel oil, 502
kinetics death, clostridia spores, 561

L

labeled flavor compound, in quantitation of components, 466
lactic acid, in beef muscle and eating quality, 57
—frozen eggs, 37
lactones, taste thresholds in butteroil, 265
lamb, flavor, 272
lard, microorganism action, 75
—peroxides and carbonyls, 75
legumes, stimulating clostridia, 411
lemon oil, adulteration, 254
lethality, RF energy and microorganisms, 320
leucoluteolinidin, in grain sorghum, 203
lipid(s), analyses, whitefish muscle, 1
—in broiler tissues, diet, 136
—compounds, wheat germ, 581
—content, herring muscles, 13
—determining peroxide values, 194
—hydrolysis, frozen herring, 13
—oxidation, raw beef, 110
—phospho—, cocoa beans, 497
—in ripening bananas, 482
—wheat germ, 581
liquid food systems, RF energy and microorganisms, 320
liver, freezer burn and temperature, 394
—rat, enzymatic activity, 462
losses, beef, external fat cover, 568
low-boiling components, cherry essence, 246
luteoforol in grain sorghum, 203
lysine, interference in proline measurements, 228
lysosomes, rat liver, 462

M

Maillard reaction, and inhibition of sulfite, 641
malathion and ascorbic acid oxidation, 551
malonic acid and meat pigment changes, 258
maple syrup, flavor fraction trace components, 105
mass spectrometry, SEE spectrometry, mass
maturity date and polygalacturonase, 527
measurement, mechanical shear force, uniform cores, 603
—objective, poultry meat tenderness, 524
—quality changes in beef, 18
meat (see: also specific meats),
—aging, 69
—color preservation in fresh, 292
—cores, uniform for shear measurement, 603
—cured, enterotoxin-B, 62
—fine structure during aging, 69
—glucose and glycogen data from sample, 353
—panel studies, 480
—scallop composition, 471
—swelling and beef microbial quality, 532
—tenderness, 69
menhaden oil, broiler tissues, 136
metabolic activity, pseudomonas cultures from chicken, 280
methyl linoleate, autoxidation in freeze-dried systems, 540
—and histidine without water, 540
—and metals without water, 540
methyl sulfide, in fermented green olives, 419
—and tomato juice mixtures, 630
methylation with diazomethane, pectin, 191
metmyoglobin, meat pigment changes, 258
—protection by nicotinamide, 292
mevalonic acid, synthesis in oranges and enzymes, 231
microbiology, apple and potato plugs, gas exchange preserved, 426
microorganisms, action in fresh lard, 75
—in beef, 93
—cheese, for degrading DDT and DDE, 386
—food, characteristics, 32
—foods, chromatographic analysis, 31
—lethality of RF energy, food systems, 320
mitochondria, chicken breast muscle, glycolytic activity, 622
—fractions of rat liver, 462
—from irradiated tomatoes, 332
moisture content of beef, influence, 554
molecular properties, postmortem muscle, 183, 196
molecular weight of pectin, 191
monitoring irradiated citrus respiration, 627
mud, sea-bottom, and canned clams, 88
muscle(s), (see also: specific kinds of animals),
—avian, 42
—bovine skeletal, physical properties, 557
—chicken sarcolemmae, 165, 172
—contactility and ATPase, tenderness, 389
—fish, protein fractionation, 597
—freezer burn and temperature, 394
—pork, water extractable proteins, 547
—skeletal, transaminases, 447, 449, 452
—sterile and inoculated, 93
—stress-susceptible animals, 299
mutant chicken, tenderness, 142
mutton, flavor, 272
myofibrillar protein solubility, temperature, 183
myofibrils, chicken muscle, Z-lines, 606
—loss of cohesion in beef during aging, 69
myoglobins, tuna, source of green pigment, 404
myosin heat gelling properties, 242
myosin-subunits, heat gelling properties, 242

N

1-naphthaleneacetic acid, pineapple, 577
nicotinamide, in color preservation of fresh meat, 292
nicotinic acid, in color preservation of fresh meat, 292
nitrogen amide, utilization by young rat, 430
nitrogenous material dialysis tubing, contaminating collagen, 52
nitrogenous substances, in grape varieties, 274
nonprotein nitrogen, changes in bovine muscle, 196
—temperature, 196
nootkatone, photoinduced reduction, 484
5′-nucleotidase, Pacific cod muscle, 637
nutritive value, 1,2-dichloroethane-extracted FPC, 355

O

odor, components in fermented olives, 419
—synergism in tomato juice mixtures, 630
off-odors, lipid oxidation, raw beef, 110
oil, essential from celery, 521, 535
—orange essence composition, 610
olive(s), ripe and sloughing, 224
—Spanish-type, head space vapor, 419
onion anthocyanins, 365
orange, essence oil composition, 610
—peel oil, 502
organoleptic (see also: sensory),
—changes, whitefish storage, 1
—evaluation of menhaden oil fed broilers, 136
organophosphate insecticides and ascorbic acid oxidation, 551
oxidation, ascorbic acid and organophosphates, 551
—gelatin-methyl linoleate system, 160
—lipid, raw beef, 110

P

paired comparisons, coffee evaluation, 489
palatability, roasted pork muscle, 486
papain, serendipity berries, 408
paper chromatography (see: chromatography, paper)
paprika bleached, carotenoid degradation, 287
paracolobactrum in olives, 224
pastry tenderness evaluation, 537
peach fruit volatiles, 618
peanuts, raw, volatiles, 625
peas, green, heat of respiration, 263
pectic enzymes in cranberry, 340
pectin, changes in molecular weight, 191
—changes in ripening strawberries, 509
—methylation with diazomethane, 191
—esterase, studied by cryoscopy, 181
pectinase, studied by cryoscopy, 181
pectolytic enzymes and ripe olive sloughing, 224
3′,4,4′,5,7-pentahydroxyflavan, grain sorghum tannin, 203
peroxidase, horseradish, bisulfite, 500
—in vanilla fruit, 235
peroxides and microorganisms in lard, 75
peroxide values, determining in lipids, 194
pH, actomyosin, 309
—ascospore production, 248
—botulism spores, 78
—changes during aging of chickens, 606
—and dipicolinic acid in spores, 343
—hydrolysis of bean esterases, 284
—porcine connective tissue, 115
—sarcoplasmic reticulum, 633
phenol content of bologna and smoke flavor, 146
phenolic amines, paper chromatographic properties, 22
phosphatase in beef muscle and eating quality, 57
phosphate metabolites, environment on pork, 600
phospholipids, cocoa beans, 497
photoinduced reduction, nootkatone, 484
pig(s), muscle, calcium chelators, 592
—sarcoplasmic reticulum, 633
—stress-susceptible muscle, 299
pigment(s), anthocyanin, grapes, 415
—anthocyanin, isolation in strawberry, 154
—anthocyanin, sour cherries, 113
—in beef muscle and eating quality, 57
—changes, raw beef, 110
—green, formation in tuna, 404
—meat, changes in beef samples, 258
—in paprika, 287
pineapple, growth regulators, 577
plugs, fresh apple and potato, microbiology, 426
—preserved by gas exchange, microbiology, 426
polio virus in foods, processing, 239
polygalacturonase, content of dates and quality, 527
—in cranberry, 340
polyphenoloxidase in vanilla fruit, 235
polyvinylpyrrolidone (PVP), isolation of strawberry pigments, 154
porcine (see: pork)
pork (see also: pig; ham)
—connective tissue, 115
—cooked roasts, trichina larvae, 210
—fat, volatile components, 335
—uniform meat cores, 603
pork muscle, connective tissue, 115, 306
—phosphate metabolites, 600
—postmortem changes, 120, 125
—sarcoplasmic proteins, 148
—subcellular fraction, 120, 125
—transaminases, 447, 449, 452
—water extractable proteins, 547
pork muscle, pale-soft-exudative (PSE),
—chemical characterization, 115
—connective tissue, 115, 306
—palatability, 486
—sarcoplasmic proteins, 148
—subcellular fraction, 120, 125
—water extractable proteins, 547
pork roasted, muscle characteristics, 486
—palatability, 486
postmortem, beef muscle, protein fraction changes, 469
—changes, pork muscles, 120, 125
—muscle molecular properties, 183, 196
—muscle, transaminases, 447
potato, gas exchange preserved, 426
potentiometric determination of fluoride in beverages, 317
poultry, cooked fat, origin and nature of aroma, 436
—tenderness, 524
preference test, multiple samples in, 475
pre-rigor tension of bovine muscle, 375
press fluid, beef external fat cover, 568
processing, polio virus in foods, 239
—tomato volatiles, 53
proline, rapid determination in grapes and wines, 228
properties, chemical and functional, eggs, 312
—chromatographic, phenolic amines, 23
—enzymes in orange mevalonic acid synthesis, 231
—heat gelling, protein solutions, 242
—irradiated tomato mitochondria, 332
—molecular, postmortem muscle, 183, 196
—physical, beef muscle, 557
—physico-chemical of actomyosin, 571
—pig and rabbit muscle, 592
—rheological and foodstuff texture, 458
—sarcolemmae from chicken muscle, 172
propionic acid, determining in frozen eggs, 359
protein(s), fraction changes in postmortem muscle, 469
—muscle, fresh water fish, 597
—sarcoplasmic, porcine muscle, 148
—water extractable, pork muscle, 547
proteinase in vanilla fruit, 235

proteolysis, relationship to tenderness, 196
proteolytic reaction, postmortem in muscle, 469
pseudomonas, in beef tissue, 93
—chicken spoilage, 279
puree, spinach color, 349

Q

qualitative analysis, cocoa bean phospholipids, 497
quality, changes, freeze-dried beef, 18
—control by headspace vapor analysis, 31
—dates and polygalacturonase, 527
—eating and beef muscle chemicals, 57
—haddock to be irradiated, 27
—microbial in beef, 532
—pastry, evaluating tenderness, 537

R

rabbit, actomyosin, 309
—muscle, calcium chelators, 592
—muscle fibrillar protein, 303
—muscle protein solubility, 183
radio frequency (RF), energy lethality, 320
radiopasteurization, haddock for longer shelflife, 27
radish anthocyanins, 365
rat, liver fractions, enzymatic activity, 462
—young, utilization of amide nitrogen, 430
residues, DDT, in chicken tissues, 569
respiration, heat of, fresh produce in CA, 261
—mitochondria, from irradiated tomatoes, 332
rheological properties, texture of foodstuffs, 458
rhubarb anthocyanins, 365
rigor, rabbit actomyosin, 303
—sarcoplasmic proteins, 148
ripening, artificial, peach volatiles, 618
—bananas, lipid, 482
—strawberries, pectin changes, 509
roasts, cooked pork, destruction of trichina larvae, 210
rolls, hard cooked eggs, discoloration, 423

S

saline model system, heat gelling properties, protein solutions, 242
sample(s), dimension, tenderness tests, 524
—multiple in preference test, 475
—number and hedonic differences, 475
sapid components, carrots, 392
sarcolemmae, from chicken muscle, 165, 172
—isolated, chemical characteristics, 172
sarcomere length, tension in bovine muscle, 375
sarcoplasmic protein(s), porcine muscle, 148
—solubility, temperature, 183
sarcoplasmic reticulum, calcium accumulating, 633
—fraction, differences in pork mucle, 125
scallops composition, variation, 471
senescence, pineapple fruit, retarding, 577
sensory (see also: organoleptic)
sensory evaluation(s), beef eating quality, 57
—beef tenderness and juiciness, 434
—coffees, 489
—free fatty acids in butter, 251
—hedonic differences, 475
—hydrocolloid sols on sweetness, 397
—mutton flavors, 272
—sizing samples rapidly, 480
—smoked bologna, 146
—sweetness of sweeteners, 101, 215
serendipity berries, intense sweetener, 408
sesquiterpene hydrocarbons, essential oil from fresh celery, 521
sex, beef properties, 557
—beef tenderness, 329
—differences, lamb and mutton, 272
shear force, measurement, providing uniform meat cores, 603
—values beef, external fat cover, 568
shear resistance vs sample dimensions, tenderness, 524
shear value, beef tenderness tests, 612
shelf life, haddock fillet, 27
shoulders, dry-cured, trichina viability, 530
significance, tyramine in foods, 22
sire, beef properties, 557
sloughing, ripe olives and bacteria, 224
smoke flavor, bologna, 146
sodium chloride, botulism spores, 78
—trichina viability, 530
sodium nitrite, botulism spores, 78
softening, ripe olives, sloughing due to bacteria, 224
softness, dates, polygalacturonase, 527
sols, hydrocolloid, sensory sweetness, 397
soluble, beef adipose tissues, 10
solutes, botulism spores, 82
sorghum, tannins, 203
sorption isobar hysteresis, detection of quality changes, 18
specifications, standard, Israel lemon oil, 255
spectrometry, infrared, peach volatiles, 618
spectrometry, mass, fat volatiles, 335
—peanut volatiles, 625
—whiskey components, 587
spectrophotometry, reflectance, beef pigment changes, 258
spinach puree, data correlation, 349
spoilage, due to *Byssochlamys fulva,* 248
—chicken, due to pseudomonas, 279
—ripe olives, sloughing, 224
spore(s), asco—, production, 248
—bacilli, survival, 518
—bacillus, chemical composition, 345
—bacillus and dipicolinic acid, 343
—bacillus, heat resistance, 345
—*Bacillus stearothermophilus,* 343, 345, 346
—botulism Type E, 78, 82
—clostridia, thermochemical death, 561
sporulation, bacillus variants, 346
stability evaluation, sweeteners, 101
staphyloccal, enterotoxin-B in cured meats, 62
steaming, vacuum, FPC, 355
sterile, beef tissue, 93
sterols, banana pulp, 584
storage, beef, microorganisms, 93
—fish, IMP degradation, 132
—fresh meat, color preservation, 292
—frozen and polio virus in foods, 239
—frozen whitefish muscle deterioration, 1
—iced, changes in fish proteins, 597
—refrigerated and polio virus in foods, 239
—relation to beef tenderness, 612
—temperature, freezer burn, 394
—time, tomato volatiles, 53
—whitefish, 1
strawberry, anthocyanins, 365
—pectin, 509
—pigment isolation, 154
—ripening and pectin changes, 509
stress-susceptible animals, capillary distribution in muscle, 299
—fiber characteristics in muscle, 299
subcellular fraction(s), pork muscle, 120, 125
—rat liver, enzymatic activity, 462
substrate, activity of green bean extracts, 284
succinic acid, frozen eggs, 37
sucrose hydrolysis, dehydrated food, 324
sugar, egg roll discoloration, 423
sulfhydryl, changes in heated beef adipose tissue, 10
—content of chicken breast, 290
sulfite inhibition and Maillard reaction, 641
sulfur dioxide, free, Maillard reaction, 641
survivor curves, bacilli spores, wet and dry heat, 518
sweet corn, heat of respiration, 264
sweetener(s), dihydrochalcone, evaluation, 101
—measuring relative sweetness, 215
—mixtures, relative sweetness, 215
—new intense, serendipity berries, 408
sweetness, hydrocolloid sols, 397
—relative measurements, 215
synergism, in tomato juice mixtures, 630
synergistic effects, among sugar mixtures, 215
syrup, maple, flavor components, 105

T

tannins, sorghum, 203
taste evaluation, rib steak, uniform samples, 480
taste thresholds, butter volatiles in deodorized butteroil, 265
temperature, avian muscle cold shortening, 42
—freezer burn, 394
—incubation, botulism spores, 82
—low, botulism Type E spore, 78, 82
—muscle protein solubility, 183
—processing, FPC, 355
—pseudomonas chicken spoilage, 279
—rearing, pork quality, 600
—sarcoplasmic reticulum, 633
tenderization, chicken muscle, 176
tenderness, beef, considerations for evaluations, 612
—beef muscle, and free amino acids, 329
—beef, sensory differentiation, 434
—breast muscle of chicken, 142
—evaluation, pastry, 537
—juiciness, 434
—meat, 69
—natural actomyosin, 571
—poultry meat, measurement, 524
—relationship of ATPase and muscle contractility, 389
tension, excised bovine muscle, 375
terpene hydrocarbons, fresh celery essential oil, 521
texture, profiles of foodstuffs, 458
thermal death point, trichina larvae in pork, 210
thermochemical factors, clostridia spore death, 561
thiocyanate method, lipid peroxide values, 194
—semi-automated, for peroxide values, 194
thresholds, sweetness evaluations, 215
—taste, butter volatiles, 265
—in tomato juice and methyl sulfide mixes, 630
tissue, pork connective, 115
tomato, juice and methyl sulfide mixtures, 630
—mitochondria from irradiated fruits, 332
—plants, arsenic residue, 295
—volatiles, 53
toxin, C. *botulinum* in crayfish, 268
—production in crayfish foods, 268
transaminase, activity, postmortem muscles, 447
—activity, white and red muscle, 447
—skeletal muscle, 447, 449, 452
triangle test, smoked frankfurter evaluation, 99
trichina larvae, destruction in cooked pork roasts, 210
—thermal death point, 210
Trichinella spirales, viability in dry-cured pork, 530
2,4,5-trichlorophenoxyacetic acid, pineapples, 577
trimethylamine oxide, distribution in green tuna, 156
—green tuna, 156
—tuna greening, 404
triterpenes, banana pulp, 584
trypsin, activity, under inert gas pressure, 370
—serendipity berries, 408
tryptophan, egg roll discoloration, 423
tubing, contamination of acid-soluble collagen, 52
tuna, greening, 156
—myoglobins, and green pigment, 404
turbidity, fibrillar protein extract from rabbit, 303
—porcine connective tissue, 115
turkey, muscle, cold shortening, 42
tyramine, analysis in foods, 22
—content of foods and drinks, 24
—content, yeast products, 47
—significance in food, 22
tyrosinase activity, under inert gas pressure, 370

U

ultraviolet radiation, egg roll discoloration, 423

V

vanilla, enzymatic activity during growth, 235
vapor analysis, high resolution, fruit comparisons, 382
variants, bacillus, sporulation, 346
variety, fruit, comparison by vapor analysis, 382
—sour cherries, pigment, 113
—tomato volatiles, 53
viability, trichina, dry-cured pork, 530
viscosity, beef microbial quality, 532
—curves, sensory sweetness, 397
—fibrillar protein extract from rabbit, 303
—foodstuffs, texture, 458
—protein muscle extracts, 187
volatile(s), banana, analysis, 504
—components, irradiated fats, 335
—peach, harvesting methods, 618
—in poultry fat aroma, 436
—raw peanuts, 625
—tomato, 53
—wheat flavor, 493

W

water, egg roll discoloration, 423
—extractable proteins, pork muscle, 547
—holding capacity and beef quality, 532
—limited concentration, reaction at, 324
waxing, irradiated citrus respiration, 627
wheat, flavor components, 493
—germ, lipid, 581
whiskey, composition, 587
whitefish, muscle deterioration, 1
wines, determination of proline, 228
wrapping material, lipid oxidation, 110

Y

yeast, products, histamine and tyramine content, 47

Z

Z-lines of myofibrils, chicken, treatment and aging, 606